Virtual Reality Game Design Enwraps Mashpee Students

By SAM HOUGHTON | Posted: Thursday, October 29, 2015 11:00 pm

Students are creating worlds at Mashpee High School.

Mashpee High School Students At MassCUE Conference

Mashpee High School students attended the MassCUE conference at Gillette Stadium last week. Senior Julien Terry gives a lesson on the school's Oculus Rift, virtual-reality goggles.

Alexander Wood, a junior, created a replica of Mount Rushmore with a likeness of his face as well as those of three friends built onto the rock face, and with a pair of state-of-the-art Oculus Rift, virtual reality, 3-D goggles, he can view the altered mountain from a viewing platform he created. Alexander copied the detail of Mount Rushmore from Google Maps, superimposed the four faces using infrared-scanning equipment and used computer software to create an ambient noise "so that you feel like you are really in there," the junior said.

Tyler Mikolajczyk, also a junior and a hopeful video game designer, digitally recreated the very room where he takes his advanced game design class, the highest level computer design class offered at the school. That class is taught by Salvatore Nocella.

Tyler's virtual classroom, viewed through the goggles, is an almost exact replica of the first-floor computer lab in the STEM wing of the school: it shows the dark blotches on the paneled ceiling, as well as the detail of the classroom's carpet, seats, posters, desks, computers, 3-D printer, whiteboards, window, courtyard outside the window, and many more details. His next project is the recreation of the entire school auditorium.

The Oculus Rift goggles, Mr. Nocella and Michael P. Looney, the school's career and technology department head, both say are so rare to schools that Mashpee is probably the only district in the commonwealth, maybe even the whole country, to have a pair on hand. The new technology is the future of gaming and is still in the Beta stages of the video game design industry, released mostly so far to development companies. They are likely to be released to the public next year, Mr. Nocella said.

The goggles, he said, allow his students to study the future of the video game industry.

The goggles look like a pair of high-tech binoculars. They are all black and weigh a couple of

pounds. A wire connects to a video-game controller, and they fit to a face with an elastic band strapped to the back of the wearer's head. The goggles completely absorb the view of the wearer into a 3-D computer screen. Before the screen comes on, a caution sign warns of possible physical discomfort.

Inside a "virtual world," someone wearing the goggles can move their head up and down and the world will shift with the movement almost seamlessly.

Mr. Nocella and Mr. Looney received the goggles through a grant late last school year through the Cape & Islands STEM Network. Since the technology is relatively new, Mr. Nocella said there have been "issues" that came up but he said that that only reveals the dedication of his students who have worked through each problem in order to create their virtual worlds.

"These guys are brilliant," he said in a recent demonstration given to The Mashpee Enterprise. "They work really hard." He says that his students are putting out college-level material, or "industry-level worlds," as Mr. Looney said.

The four students in Mr. Nocella's advanced class—Tyler, Alexander, Paul Ryder, grade 11, and Julien Terry, grade 12—displayed their virtual reality worlds last week at Massachusetts Computer Using Educators/M.A.S.S. Fall Technology Conference, known as MassCUE, held at Gillette Stadium.

MassCUE is the largest computer conference in the commonwealth, where students, teachers, administrators, college professors and speakers in the computer industry showcase their work. More than 2,000 attend the yearly event.

It is the third year in a row that Mr. Nocella's students were invited to display their work.

Julien said that it was a cool experience watching attendees visit their booth and put on the goggles. He said that many were amazed at the quality and oftentimes they were grabbing at the air while wearing the goggles as they moved through the virtual worlds.

He also said that it was strange to see people so amazed with the goggles because the technology has become a daily routine for them.

Julien recreated Minas Tirith, a white castle from "Lord of the Rings" that nestles into a mountain. His virtual world features a fountain with responsive sound—the fountain becomes louder the closer the goggle-wearer gets. There are torches, a courtyard, tapestries hung inside the castle, a seamless skyline, and other detailed design. "He's created a massive world," Mr. Nocella said.

Julien said that he is looking into a career in engineering where he can use his hands but the virtual reality programming is something he puts his spare time into and definitely something he enjoys.

Students create their worlds in different ways but basically each starts with a blank canvas on a

computer screen. Using a program called Maya, different forms are created using cones, squares, spheres and other basic shapes.

The shapes can then be imported into a computer program called Unity, which lays a kind of map where all the individual objects created can be pulled together. The Oculus Rift software allows a character to be placed into the Unity "map" for viewing and movement.

Since the school year began, it took each student the daily, hour-long computer class time, as well as additional free time, to finish their worlds before the conference. But the hard work paid off.

Mr. Nocella said that he could see the confidence of his students grow at the MassCUE conference as teachers and designers watched the Mashpee students' creations with amazement.

He said that it is a joy to see his former students go onto careers in the field and his current students work toward the industry.